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Original Research Article

Title

Domestic violence against women and its consequence on child mortality: analysis from five African countries.

Abstract

Domestic violence (DV) is a common social menace that can directly or indirectly affect the health of a child. Despite the attention received by violence against women internationally only a few studies have probed into its effect on child's mortality. This study aims to assess the effect of maternal exposure to domestic violence on under-5 mortality using nationally representative population based data from five African countries. Logistic regression in 2 different models was used to access the association between maternal exposure to DV and child mortality after adjusting for some maternal socio-demographic variables. The prevalence of DV among respondents is high with a range of 35-71% and the highest rate seen in Congo DR. Maternal exposure to DV was significantly associated with under-5 death. Decision making autonomy of mothers and number of living children were important determinant of under-5 mortality in the face of DV. There is urgent need to reduce or totally eradicate violence against women especially in Africa ravaged by war and internal conflicts to assist in further reduction of child mortality rates in the continent. Keywords- Intimate partner violence, under-5 mortality, Africa

Introduction

Intimate partner violence is the third highest cause of death among people 15-44 years of age [1] and the most common form of violence against women. Its negative effects on women's health are serious enough to be recognized as a public health crisis with extensive effects on children [2-4].

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Although women can be violent in a relationship bulk of the global burden of DV are borne by women, this is particularly true in Africa where women are usually emotionally and economically dependent on men [5]. Owing to cross-cultural differences in expected gender roles, DV varies between geographical locations. A global lifetime prevalence of 10-70% has been stated for women in marriage or current relationship [5] while in sub-Saharan Africa a life time prevalence of DV is between 20-71% [6].This has been argued to be non representative due to the low reporting trends of DV in many sub-Saharan African countries.

While domestic violence is a universal problem, it is a problem of massive magnitude in less developed countries. A recent survey in Uganda and Bangladesh reported that more than 80% and 94% of women surveyed respectively had experienced physical, sexual or psychological violence at some point in their marriage or intimate relationship [7]. In many parts of Africa DV is a justifiable punishment accepted as a societal norm. This acceptance is contributed by the increasingly armed conflicts in most African countries, lawlessness and almost absent interference of police in intra marital affairs [8]. A study in Nigeria revealed that 47% and 42% of women in south-south Nigeria and the rest of the country respectively justified DV for one reason or the other.

Domestic violence not only affects the woman but also the health and psychological stability of her child [9]. Several studies outside Africa have documented a strong link exists between DV and childhood morbidity and mortality [10-11]. Children who witness such violence are at greater risk of being affected in various aspect of their life including physical, behavioral, cognitive development and social adjustment of a child [12]. In a study done in north of India it was found that risk of child death during the perinatal and neonatal period is twice higher in women who experienced domestic violence during pregnancy compared to those who did not [13]. Another

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study in India showed also that women who had been repeatedly abused were significantly more likely than non abused women to have experienced an infant death or pregnancy loss [14]. Intimate Partner Violence had also been associated with childhood diseases like fever, cough and fast breathing in a study in Uganda [15].

Even though DV has caught the attention of the international community [16], the consequent effect of DV on the child has received little attention globally especially in Africa. Although some studies have shown an association between intimate partner violence and child mortality [13-17] researches on this association is scanty in Africa. This study therefore seeks to ascertain the extent to which DV affects child's mortality in Africa using population based data from five African countries.

Materials and Methods

This is a cross-sectional descriptive and analytical study. Five countries where employed in this analysis. The choice for these countries was based on availability of data using the modified conflict tactics scale (CTS) for measurement of DV in accordance to WHO 2001 guideline for ethical and safe data collection in DV research. The countries selected were Nigeria (West Africa), Egypt (North Africa), Kenya (East Africa), Congo DR (Central Africa) and Zimbabwe (South Africa). The population based survey used data from the 2008 edition of Nigeria Demographic and Health Survey (NDHS), 2005 edition of Egypt demographic and Health survey (EDHS), 2007 Kenya Demographic and Health Survey (KDHS), 2006 Congo Democratic Republic (Congo DR) Demographic and Health Survey (CDHS), and 2005-2006 Zimbabwe Demographic and Health survey (ZDHS).

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The 2008 edition of Nigeria DHS survey is a nationally-representative probability sample, using a stratified two-stage cluster sampling design consisting of 888 clusters, 286 urban and 602 rural areas. In all, a nationally representative sample of 36,298 household was selected for the 2008 NDHS survey. From these household 34,596 women were eligible for interview out of which 33,385 were successfully interviewed yielding a response rate of 96.5%.29 [18].

Egypt

The 2005 EDHS was a national representative carried out in 2 stages. In the first stage selection, a total of 682 primary sampling units PSUs (289shiakhas/towns and 393 villages) were chosen for the 2005 EDHS sample. The second stage of selection in the 2005 EDHS involved several steps that divided towns in the PSU into segments. A household listing was obtained for each segment. Using the household lists, a systematic sample of 22,807 households was chosen for the 2005 EDHS. The overall response rate for women in the 2005 EDHS was 96.9% [19].

Kenya

The 2008-09 KDHS also adopted a two-stage sample design. The first stage involved selecting data collection points (‘clusters’) from the national master sample frame. A total of 400 clusters (133 urban and 267 rural) were selected from the master frame. The second stage of selection involved the systematic sampling of households from an updated list of households. All women age 15-49 years who were either usual residents or visitors present in sampled households on the night before the survey were eligible to be interviewed in the survey. The overall response rate for women in the 2008-09 KDHS was 94.1% [20].

Congo DR

The fieldwork for the EDS-RDC was conducted in two phases: from January to March 2007 in Kinshasa and from May to August 2007 in the other provinces. In total, 9,995 women age 15-49

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and 4,757 men age 15-59 were interviewed. The data are representative at the national level, for urban and rural residence, and for the eleven provinces (Kinshasa, Bas-Congo, Bandundu, Équateur, Orientale, Nord-Kivu, Sud-Kivu, Maniema, Katanga, Kasaï Oriental, and Kasaï Occidental) [21].

Zimbabwe

The sampling frame used for the 2005-06 ZDHS was the 2002 Zimbabwe Master Sample (ZMS02) developed by CSO after the 2002 population census. With the exception of Harare and Bulawayo, each of the other eight provinces was stratified into four strata according to land use. The list of households obtained from the each stratum was used as the frame for the second stage random selection of households. A representative probability sample of 10,800 households was selected for the 2005-06 ZDHS. All women age 15-49 who were either permanent residents of the households in the 2005-06 ZDHS sample or visitors present in the household on the night before the survey were eligible to be interviewed. The overall response rate for women in the 2005-06 ZDHS was 85.6% [22].

For all countries represented in these study, only a subsample of mothers with an under-5 child (whether alive or death) and complete information on domestic violence based on the conflict tactical scale were selected for analysis.

Exposure variable

Exposure to DV was assessed using the DHS intimate partner module which is based on a modified and previously version of the conflict tactics scale (CTS) stated above under data collection and participant will be classified as “exposed” and “non-exposed”. Intimate Partner Violence referred to any exposure to one or several of the following acts against women by a current or former husband or intimate partner: *i)* Pushing, shaking, or throwing something at her.

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ii) Slapping her or twisting her arm. *iii)* Punching or hitting her with something harmful. *iv)* Kicking or dragging her. *v)* Strangling or burning her. *vi)* Threatening her with a weapon e.g. gun or knife. *vii)* Attacking her with a weapon. *ix)* Humiliating her in public. *x)* Threatening her or someone close to her. *xi)* Forced sexual intercourse. *xii)* Other sexual acts not desired

Predictor variable

i) Age of respondent was assessed and grouped as 15–24, 25–34, 35+; *ii)Marital status* of the surveyed women was originally grouped as "never married", "currently married", "formerly married. These were re-coded into currently married for mothers in marriage and not married for mothers who have never and/or formerly married groups. *iii) Educational status* was assessed using the following variables: highest level of education, grouped into no education, primary and secondary or higher education. *iv) Occupation* was classified as professional and/or technical and/or managerial and /or clerical and/or teachers; unskilled for agricultural self employed/agricultural employee/household & domestic/unskilled manual occupations); and not working. *v) Wealth index* an indicator of the economic status of households that is consistent with expenditure and income measures was constructed to represent the household's economic level using principal component analysis, since the DHS does not generally collect information on household income or wealth. These weighted values of poorest, poorer, middle, richer and richest were then summed and rescaled to the poor for families in the poorest and poorer category, middle for families in the middle wealth category or rich for families in the richer and richest wealth category. *vi) Autonomy in domestic decisions* was assessed by asking if the women had final say regarding, "large household purchases", "daily household purchases", "visits to family or friends, "own health", and "food to be cooked each day" which were regarded as sub-variables. Possible response options "respondent alone", "respondent and

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husband/partner", "respondent and other person in the household", formed one group of the dichotomy, while the options "husband/partner alone", and "someone else" formed the other group of the dichotomy. The various answers within each sub-variable were all summed up and categorized as ‘no’ for women with no decision autonomy and ‘yes’ for those who had autonomy in family decisions. *vii) Access to media* was assessed using questions on frequency of listening to radio, reading newspapers/magazines, and watching television. Possible responses were not all, less than once a week, at least once a week and almost every day. The responses were dichotomized and summed up into No for those with no access (not at all and less than once a week), and Yes for women who had access (at least once a week and almost every day) to print and electronic media. *viii) Literacy level* considered as a factor influencing access to information, was assessed as the ability to read (being "able to read whole sentences) formed one group of the dichotomy, while "able to read part of a sentence" and "unable to read" were considered as representing illiteracy, and formed the other group of the dichotomy. *ix)* Number of living children was categorized as 0, 1, 2-3 and 4+

Outcome variable

The outcome variable was under-5 death defined as a child dying between birth and before the fifth birthday. Mothers were categorized into those who have experienced death of an under-5 child and those who had not had such event.

Table 1- Summary of variables definition and categorization

Dimensions of DV based on Conflict Tactical Scale	
Physical	
Pushing, shaking or throwing something	Yes; no
Slapping or arm twisting	Yes; no
Pushing or hitting with harmful object	Yes; no
Kicking or dragging	Yes; no
Strangling or dragging	Yes; no
Emotional	

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Threatening with a weapon	Yes; no
Public humiliation	Yes; no
Economic deprivation	Yes; no
Controlling behaviours	Yes; no
Sexual	
Non contact sexual abuse	Yes; no
Forced sexual intercourse	Yes; no
Other undesired sexual act	Yes; no
Socio-demographic	
Age of respondent	15–24; 25–34; .35+ years
Educational attainment	No education; primary; secondary or higher
Number of children alive	0, 1; 2–3; & 4 or more children
Wealth index	Poor; middle; rich
Occupation	None; Unskilled; Skilled
Literacy	Yes; no
Marital status	Yes; no
Media access	Yes; no
Decision autonomy	Yes; no

Ethical consideration

This study is based on analysis of secondary data with all participant identifiers removed. The survey procedure and instruments for Demographic and Health Survey (DHS) for Nigeria, Egypt, Kenya, Congo DR and Zimbabwe were ethically approved by the Ethics Committee of the Opinion Research Corporation (ORC) Macro International Inc, Calverton, USA, and by the National Ethics Committee in the Federal Ministry of Health of these countries. Informed consent was obtained from all participants prior to participation in the survey, and collection of information was confidential [18-22].

Data Analysis

Analysis using logistic regression was carried out in 2 models for all five countries. In model 1, data from each country was fitted separately to estimate the baseline association between DV and under-5 mortality. Confounders were thereafter controlled for in model 2. This was done to see

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how these social and demographic factors (confounders) modified the association between maternal DV and under-5 mortality and how much of the association could be explained by these variables. All analysis was carried out using SPSS version 19.

Results

Table 2 shows the characteristics of respondents surveyed. The mean age of mothers was higher in Egypt (33.8 ± 8.5) compared to other countries (*P*=0.001) while the mean age of their children was highest in Nigeria (38.4 ± 12.4, *P*=0.011). The average age of child's death for mother with event of an under-5 death was lowest in Egypt (10.2 ± 2.9) and highest in Zimbabwe (17.3± 4.1) (*P*=0.001). The prevalence of DV seen in this survey ranged from 35-71%. The proportion of mothers who had experienced DV was highest in Congo DR 71% (95% CI; 66-76%). Kenya and Zimbabwe had a proportion of 45% (95% CI; 39%-50%) and 49% (95% CI; 43-56%) respectively while Egypt 39% (95% CI; 33-44%) and Nigeria 35% (95% CI; 33%-39%) had the lowest proportion of DV among surveyed mother.

Table 2 shows a cross-tabulation of predictor variables (DV and socio-demographic factors) and outcome variable (events of an under-5 death) among respondents. Age of respondents was significantly associated with death of an under-5 child in almost all countries except Egypt (Nigeria *P*=0.001; Kenya *P*=0.013; Congo DR *P*=0.001; Zimbabwe *P*=0.002; Egypt *P*=0.423)

Table 2- Characteristics of respondents

Countries	**Nigeria**	**Egypt**	**Kenya**	**Congo DR**	**Zimbabwe**
	2008	**2005**	**2008**	**2007**	**2006**
Socio-demographics					
Exposed to DV	**n= 2222**	**n= 268**	**n= 327**	**n= 346**	**n= 226**
No	1445 (65%)	164 (61%)	157 (55%)	101 (29%)	114 (51%)
Yes	777 (35%)	104 (39%)	170 (45%)	245 (71%)	112 (49%)
Age of Respondent	**n= 3081**	**n= 896**	**n= 355**	**n= 883**	**n= 343**
15-24 years	515 (17%)	14 (2%)	67 (19%)	171 (19%)	77 (23%)
25-34 years	1030 (33%)	210 (23%)	148 (42%)	330 (37%)	135 (39%)
35+ years	1536 (50%)	672 (75%)	140 (39%)	382 (44%)	131 (38%)

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Education	**n= 3181**	**n= 896**	**n= 405**	**n= 883**	**n= 343**
None	1973 (62%)	530 (59%)	91 (23%)	278 (32%)	34 (10%)
Primary	724 (23%)	215 (24%)	250 (62%)	398 (45%)	140 (41%)
Secondary and Higher	484 (15%)	151 (17%)	64 (15%)	207 (23%)	169 (49%)
Married	**n= 3181**	**n= 896**	**n= 405**	**n= 883**	**n= 343**
No	228 (7%)	81 (9%)	99 (24%)	141 (16%)	135 (39%)
Yes	2953 (93%)	815 (91%)	306 (76%)	742 (84%)	208 (61%)
Wealth Index	**n= 3181**	**n= 896**	**n= 404**	**n= 883**	**n= 343**
Poor	1905 (60%)	554 (62%)	191 (47%)	462 (53%)	144 (42%)
Middle	634 (20%)	152 (17%)	72 (18%)	177 (19%)	77 (22%)
Rich	642 (20%)	190 (21%)	141 (35%)	244 (28%)	122 (36%)
Occupation	**n= 3184**	**n= 896**	**n= 403**	**n= 883**	**n=343**
None	870 (27%)	707 (79%)	132 (33%)	157 (17%)	171(50%)
Unskilled worker	772 (24%)	91 (10%)	158 (39%)	543 (62%)	93 (27%)
Skilled worker	1542 (49%)	98 (11%)	113 (28%)	183 (21%)	79 (23%)
Literate	**n= 3168**	**n= 887**	**n= 393**	**n= 878**	**n= 339**
No	2597 (82%)	689 (78%)	208 (53%)	570 (65%)	105 (31%)
Yes	571 (18%)	198 (22%)	185 (47%)	308 (35%)	234 (69%)
Decision autonomy	**n= 2874**	**n= 469**	**n= 289**	**n= 881**	**n= 175**
No	1190 (41%)	73 (16%)	10 (3%)	138 (16%)	3 (2%)
Yes	1684 (59%)	396 (84%)	279 (97%)	743 (84%)	172 (98%)
Media Access	**n= 3147**	**n= 888**	**n= 404**	**n= 877**	**n= 340**
No	1742 (55%)	52 (6%)	103 (26%)	604 (69%)	192 (57%)
Yes	1405 (45%)	836 (94%)	301 (74%)	273 (31%)	148 (43%)
Nos. of living children	**n= 3181**	**n= 896**	**n= 405**	**n= 883**	**n= 343**
0	127 (4%)	2 (0.3%)	17 (4%)	47 (5%)	93 (27%)
1	706 (22%)	15 (1.7%)	87 (22%)	223 (25%)	83 (25%)
2-3	1022 (32%)	341 (38%)	156 (36%)	272 (31%)	94 (27%)
4 or more	1326 (42%)	538 (60%)	145 (38%)	341 (39%)	73 (21%)
Mean of variables	**mean ± SD**	**mean ± SD**	**mean ± SD**	**mean ± SD**	**mean ± SD**
Age of mothers (years)	31.2 ± 8.5	33.8 ± 8.4	31.3 ± 8.3	31.1 ± 8.5	31.3 ± 8.2
Age of child (month)	38.4 ± 12.4	37.6 ± 11.4	37.9 ± 13.1	36.9 ± 12.8	37.1 ± 12.0
Age at child death (month)	12.2 ± 2.5	10.2 ± 2.9	10.5 ± 3.1	14.1 ± 2.4	17.3 ± 4.1

while wealth index and occupation of mother was significantly associated with an event of under-5 death in Nigeria (P=0.036) and Congo DR (P=0.020) respectively.

There was no significant difference in the proportion of respondents with an event of under-5 deaths and experience of DV in all countries surveyed. After adjusting for maternal variables considered in this survey, multivariate logistic regression analysis showed that mothers without experience of DV had about 0.7 less likelihood to have an event of under-5 mortality compared to

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mothers with experience of DV(OR 0.71; CI 0.53-0.94) in Nigeria but not in other countries. Similarly having no decision making autonomy in family issues also increased the likelihood of having an event of under-5 death among surveyed mothers in Nigeria (OR 1.55; CI 1.15-2.10) but not in other countries. In Zimbabwe, higher number of children was significantly associated with under-5 death. Mothers with one child (OR 0.38; CI 0.20-0.75) and those with 2-3 children (OR 0.41; CI 0.24-0.72) were both about 0.4 times less likely to have an under-5 death compared to mothers with 4 or more children (see table 4).

Discussion

The prevalence of DV from this survey were within similar range from others studies conducted in Africa [6, 23]. The different values of DV prevalence seen may indicate the diverse cultural and geographical settings present in these countries. The prevalence in all surveyed countries is unacceptably high compared to values from countries in other continents [24]. The comparatively higher value of DV seen in Congo DR may be related to the decades of war and regional strifes which have ravaged the country. These conflicts are well documented predisposition to DV and child mortality [8]. Though not consistent across all countries surveyed which may be related to sample size, the study further revealed that experience of DV by mothers significantly increased the probability of an under-5 death. This is hardly surprising as several studies have linked poor

Table 3: Cross-tabulation of maternal socio-demographics and Under-5 mortality

	Experience of Under- 5 death in mothers														
Countries	**Nigeria**			**Egypt**			**Kenya**			**Congo DR**			**Zimbabwe**		
	No	**Yes**	**Total**	**No**	**Yes**	**Total**	**No**	**Yes**	**Total**	**No**	**Yes**	**Total**	**No**	**Yes**	**Total**
Education		***P*=0.103**			***P*=0.350**			***P*=0.459**			***P*=0.137**			***P*=0.997**	
None	68 (55)	1905(62)	1973	39 (56)	491 (60)	530	3 (14)	88 (23)	91	17 (33)	261 (31)	278	2 (10)	32 (10)	34
Primary	38 (30)	686 (23)	724	21 (30)	194 (24)	215	13 (62)	237 (62)	250	17 (33)	381 (46)	398	8 (40)	132 (41)	140
Secondary and higher	19 (15)	465 (15)	484	10 (14)	141 (16)	151	5 (24)	59 (15)	64	17 (33)	190 (23)	207	10 (50)	159 (49)	169
Age		***P*=0.001**			***P*=0.425**			***P*=0.013**			***P*=0.001**			***P*=0.021**	
15-24 yrs	2 (2)	513 (17)	515	1 (1)	13 (2)	14	0 (0)	67 (18)	67	2 (4)	169 (20)	171	0 (0)	77 (24)	77
25-34 yrs	17 (13)	1113 (36)	1030	12 (18)	198 (24)	210	5 (16)	143 (37)	148	9 (18)	321 (39)	330	5 (25)	130 (40)	135
35+ yrs	106 (85)	1430 (47)	1536	57 (81)	615 (74)	672	16 (84)	174 (45)	140	40 (78)	342 (41)	382	15 (75)	116 (36)	131
Wealth Index		***P*=0.036**			***P*=0.694**			***P*=0.300**			***P*=0.251**			***P*=0.142**	
Poor	62 (50)	1843 (60)	1905	40 (57)	514 (62)	554	7 (33)	184 (48)	191	21 (41)	441 (53)	462	8 (40)	136 (40)	144
Middle	28 (22)	606 (20)	634	13 (19)	139 (17)	152	6 (29)	66 (17)	72	12 (24)	165 (20)	177	2 (10)	95 (28)	77
Rich	35 (28)	607 (20)	642	17 (24)	173 (21)	190	8 (38)	134 (35)	141	18 (35)	226 (27)	244	10 (50)	112 (36)	122
Occupation		***P*=0.889**			***P*=0.964**			***P*=0.841**			***P*=0.020**			***P*=0.965**	
None	32 (26)	838 (28)	870	56 (80)	651 (79)	707	6 (29)	126 (33)	132	5 (10)	152 (18)	157	10 (50)	161 (50)	171
Unskilled	31 (25)	741 (24)	772	7 (10)	84 (10)	91	8 (38)	150 (59)	158	28 (55)	515 (62)	543	5 (25)	88 (27)	93
Skilled	62 (49)	1462 (48)	1542	7 (10)	91 (11)	98	7 (33)	106 (28)	113	18 (35)	165 (20)	183	5 (25)	74 (23)	79
Literate		***P*=0.377**			***P*=0.906**			***P*=0.848**			***P*=0.122**			***P*=0.569**	
No	97 (79)	2482 (82)	2579	54 (78)	635 (78)	689	11 (55)	197 (53)	208	28 (55)	542 (66)	570	7 (37)	98 (31)	105
Yes	26 (21)	545 (18)	571	15 (22)	183 (22)	198	9 (45)	176 (47)	185	23 (45)	285 (34)	308	12 (63)	222 (69)	234
Married		***P*=0.170**			***P*=0.468**			***P*=0.651**			***P*=0.261**			***P*=0.556**	
No	12 (10)	216 (7)	228	8 (11)	73 (8)	81	6 (29)	93 (24)	99	11 (22)	130 (16)	141	9 (45)	124 (38)	135
Yes	103 (90)	2840 (93)	2953	62 (89)	753 (92)	815	15 (71)	291 (76)	306	40 (78)	702 (84)	742	11 (55)	199 (62)	208
Media access		***P*=0.079**			***P*=0.203**			***P*=0.645**			***P*=0.414**			***P*=0.712**	
No	67 (48)	1675 (55)	1742	7 (10)	45 (5)	52	4 (19)	99 (26)	103	32 (63)	572 (69)	604	10 (50)	182 (57)	192
Yes	73 (52)	1348 (45)	1405	63 (90)	773 (95)	836	17 (81)	281 (74)	301	19 (37)	254 (31)	273	10 (50)	138 (43)	148
Decision autonomy		***P*=0.870**			***P*=0.843**			***P*=0.796**			***P*=0.826**			***P*=0.259**	
No	36 (33)	1154 (42)	1190	7 (18)	66 (15)	73	0 (0)	10 (4)	10	3 (6)	135 (16)	138	0 (0)	3 (2)	3
Yes	73 (67)	1611 (58)	1684	32 (82)	364 (85)	396	15 (100)	264 (96)	279	47 (94)	696 (84)	743	7 (100)	165 (98)	172
Number of children		***P*=0.117**			***P*=0.298**			***P*=0.994**			***P*=0.010**			***P*=0.641**	
0	5 (4)	122 (4)	127	0 (0)	2 (.3)	2	1 (5)	16 (4)	17	7 (14)	40 (4)	47	6 (30)	87 (27)	93
1	17 (14)	689 (23)	706	1 (2)	14 (1.7)	15	4 (19)	83 (22)	87	6 (12)	217 (26)	223	6 (30)	77 (24)	83
2-3	41 (43)	981 (32)	1022	34 (48)	307 (37)	341	8 (38)	148 (39)	156	18 (35)	254 (31)	272	6 (30)	88 (27)	94
4+	62 (49)	1264 (41)	1326	35 (50)	503 (61)	538	8 (38)	137 (35)	145	20 (39)	321 (39)	341	2 (10)	71 (22)	73
Exposed to DV		***P*=0.141**			***P*=0.407**			***P*=0.945**			***P*=0.640**			***P*=0.767**	
No	58(73)	1387 (65)	1445	10 (50)	154 (62)	164	9 (50)	148 (48)	157	6 (25)	95 (30)	274	7 (44)	107 (51)	114
Yes	21 (27)	756 (35)	777	10 (50)	94 (38)	104	9 (50)	161 (42)	170	18 (75)	227 (70)	609	9 (56)	103 (49)	112

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Table 4- Adjusted logistic regression analysis of under-5 death and maternal socio-demographics

Socio-demographics	Nigeria OR (95% CI)	Egypt OR (95% CI)	Kenya OR (95% CI)	Congo DR OR (95% CI)	Zimbabwe OR (95% CI)
Maternal exposure DV					
No	0.71(0.53,0.94)†	0.36(0.42,2.2)	2.58(0.90,7.33)	1.04(0.86,1.90)	1.29(0.87,1.91)
Yes	1	1	1	1	1
Maternal age					
15-24 yrs	0.81(0.51,1.28)	2.63(0.33,21.04)	3.23(0.34,28.8)	1.80(0.67,4.88)	1.74(0.94,3.25)
25-34 yrs	1.03(0.71,1.51)	1.84(0.64,5.30)	1.19(0.31,4.56)	0.83(0.41,1.68)	1.26(0.79,2.00)
35+ yrs	1	1	1	1	1
Maternal education					
None	1	1	1	1	1
Primary	0.71(0.35,1.45)	0.73(0.24,1.99)	0.74(0.22,2.47)	1.26(0.62,2.53)	0.88(0.38,2.7)
Secondary and Higher	0.52(0.09,3.20)	1.27(0.34,4.83)	1.90(0.23,15.6)	1.24(0.34,4.57)	0.71(0.26,2.01)
Wealth index					
Poor	1	1	1	1	1
Middle	0.81(0.50,1.30)	0.43(0.89,2.08)	1.44(0.37,5.58)	1.40(0.72,2.73)	1.20(0.70,2.06)
Rich	0.59(0.27,1.30)	0.39(0.56,2.65)	3.65(0.76,17.6)	1.75(0.64,4.92)	1.17(0.71,1.93)
Maternal occupation					
None	1	1	1	1	1
Unskilled	0.76(0.27,2.13)	0.32(0.02,4.58)	1.30(0.32,5.35)	0.69(0.20,2.43)	1.45(0.83,2.53)
Skilled	1.11(0.82,1.45)	0.82(0.04,1.55)	0.86(0.19,3.95)	0.27(0.05,1.30)	1.17(0.71,1.93)
Literacy of mother					
No	1	1	1	1	1
Yes	0.76(0.44,1.32)	0.073(0.05,1.04)	1.40(0.41,4.80)	1.21(0.47,3.08)	1.37(0.75,2.51)
Married					
No	0.67(0.40,1.18)	0.45(0.12,1.69)	Not computable	1.41(0.52,2.58)	Not computable
Yes	1	1	1	1	1
Media access					
No	0.70(0.53,0.93)†	3.74(0.34, 2.98)	1.39(0.41,4.80)	1.05(0.45,2.47)	1.22(0.75,1.98)
Yes	1	1	1	1	1
Decision autonomy					
No	1.55(1.15,2.10)†	0.34(0.05,2.48)	0.77(0.11,5.53)	1.23(0.38,1.36)	0.63(0.08,4.97)
Yes	1	1	1	1	1
Number of children					
1	1.28(0.79,2.07)	0.27(0.93,1.76)	0.79(0.12,5.22)	Not computable	0.38(0.20,0.75)†
2-3	1.16(0.79,1.71)	Not computable	1.23(0.29,5.13)	0.71(0.27,1.92)	0.41(0.24,0.72)†
4 or more	1	1	1	1	1

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maternal outcomes such as depression, alcoholism, poor mental state to occurrence or experience of DV which is a prerequisite to poor child care and outcome. Furthermore, the child of a battered mother can accidentally or intentionally be a victim of DV both of which can have a disastrous health and psychological outcomes on the mother and the child [24-25].

Decision making autonomy was seen as a protective factor to child mortality in the face of DV against mothers. This observed effect in Africa which is mostly a patriarchal society (where men are usually dominant in many sphere of family and community life) may be attributed to the fact that women who are economically and emotional independent and can take decision irrespective of approval of their spouses are more likely to recover and continue their lives for themselves and their children despite domestic violence.

Additionally, having fewer numbers of children reduced the odds of child death in the face of domestic violence against the mother. This could be attributed to the ease, economically, emotionally and psychologically to cater and protect fewer number of children from direct and indirect effect of spousal violence. In most Africa countries where there is usually little or no assistance from government in child care, women in abusive relationships and sometimes her relatives usually shoulder the responsibility of protecting her child or children from both physical and psychology trauma usually associated with domestic violence in families. It is therefore intuitive to assume that the more children a woman has in her care, the more daunting this task becomes particularly where she herself is a victim of such abuses.

Domestic violence is a social menace which does not only affect the physical and mental health of a woman but also can affect her ability to cater and care for her child especially in Africa where there is little or no social system to assist women and children in abusive families. Government of African countries must ensure there are targeted and deterring legislations as well

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as women empowerment to help curb the incidences of DV and its consequences on maternal and child health.

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